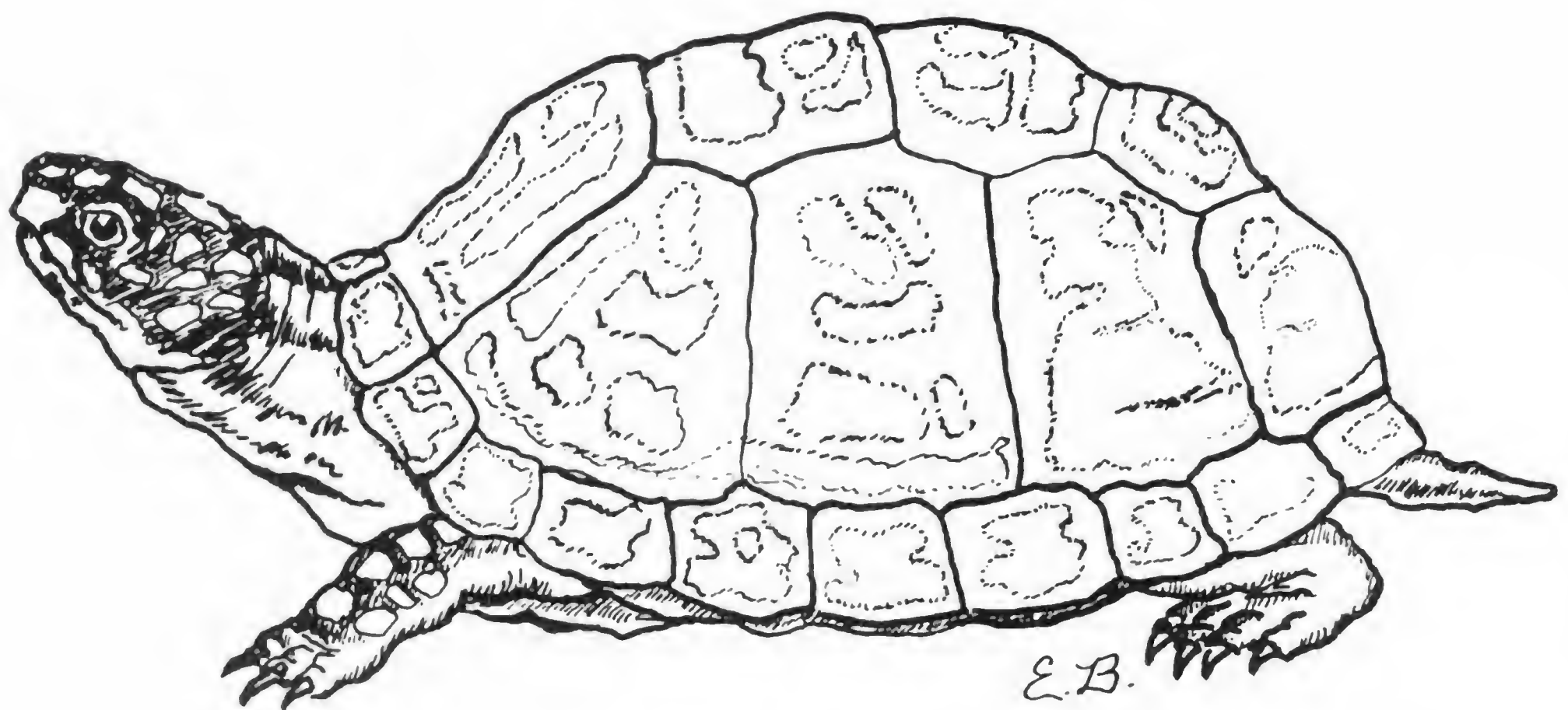


# CATESBEIANA



BULLETIN OF THE VIRGINIA HERPETOLOGICAL SOCIETY

VOLUME 4

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# C A T E S B E I A N A

## Bulletin of the Virginia Herpetological Society

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### BULLETIN INFORMATION

Catesbeiana, the Bulletin of the Virginia Herpetological Society, is issued twice a year by the Virginia Herpetological Society. Membership is open to all individuals interested in the study of amphibians and reptiles. Dues are \$5.00 per volume year for adults, \$3.00 for individuals under the age of 18, and \$7.50 for families (one vote is allowed for a family membership). Membership includes one subscription to Catesbeiana. Dues are payable by January 1 of each calender year. Send to Ben Greishaw, VaHS Treasurer, 7622 Hollins Road, Richmond, VA 23229. Make checks payable to the "Virginia Herpetological Society". Herpetological societies desiring exchange of publications should send copies of their publications to: Dr. Joseph C. Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173. Any materials for publication in Catesbeiana should also be sent to Dr. Mitchell.

### MEETING NOTICE

The Fall meeting of the VaHS will be on October 6, 1984 at the Center in the Square (Roanoke Valley Science Museum). See page 20 for additional details and a map.

### DUES NOTICE

Dues for VaHS membership in 1985 are due by January 1, 1985.

Cover: Terrapene carolina by Eve Bader



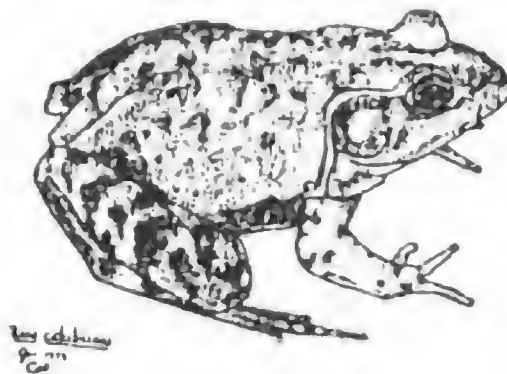
## EDITORIAL POLICY

Catesbeiana replaced the formal name of the Bulletin of the Virginia Herpetological Society in 1981 as the publication of the VaHS to reflect the changes in the society's structure. Although the format of the bulletin changed dramatically, its adherence to the central theme of the science of Virginia herpetology has remained firm. Beginning with the editorship of F. J. Tobey (1958-1980) and continuing with D. A. Merkle (1981-1982), the bulletin has published with few exceptions, only scientific information and news on the herps of Virginia. We will maintain that tradition. During several meetings in 1980 and 1981, brief discussions addressed this point. It was agreed that Catesbeiana will publish articles pertaining to herpetology outside of Virginia only if insufficient material is on hand to complete an average size issue (about 18 pages). In this vein, articles pertaining to species found in Virginia will take precedence over those which do not. Rarely, if ever, will articles be reprinted in Catesbeiana after they have been published elsewhere. If someone is unsure whether something he/she has is appropriate, he or she should contact the editor.

Authors may wish to submit articles in final copy-ready form. To maintain consistency, the type is IBM Letter Gothic (with 12 characters per inch), using a carbon ribbon; all margins are 1 inch, leaving the pages unnumbered. Consult the style of articles in this issue for additional information. Please be advised, however, that articles are usually reviewed by at least one officer (past or present) of the VaHS in addition to the editor. All changes must be approved by the author before publication. Thus, manuscripts, in final copy or not, should be submitted well in advance of March or September.

Reprints of articles are not available to authors, however, authors may reprint articles themselves to meet professional needs.

Herpetological artwork is welcomed. If the artwork has been published elsewhere, we will need to obtain copyright before we can use it in an issue. We need drawings and encourage members to send us anything appropriate, especially their own work.





## AMPHIBIANS AND REPTILES FROM ROCKINGHAM COUNTY, VIRGINIA

Harry G. M. Jopson  
PO Box 26, Bridgewater, Virginia 22812

Rockingham County, in northwestern Virginia, is one of the largest and topographically varied counties of the state, covering 876 square miles. The Blue Ridge Mountains stretch along its eastern border, while the Allegheny ridges, of the Ridge and Valley Province, occupy the western portion of the area. Between the two ridges lies the Shenandoah Valley, hereafter referred to as simply "the Valley", with many chert hill monadnocks. Massanutten Mountain, which divides the Valley for over forty miles, intrudes into the northern portion of Rockingham County.

Elevations in the county range from 880 ft. above sea level on the Shenandoah River where it leaves the county flowing north, to 4344 ft. at Bother Knob on the Virginia-West Virginia border. All drainage in the county is through the Shenandoah River system.

The vegetation in the Valley is typical of closely tended farming country. Most woodland has been eliminated. That which remains is second growth hardwood in varying stages of seral development toward an oak-hickory woodland. On the mountain ridges oaks still dominate much of the terrain, along with table mountain pine, Pinus pungens, and hemlock, Tsuga canadensis. The ridges were once covered largely by an oak-chestnut forest, but the chestnut is now extirpated. There is a small stand of red spruce, Picea rubens, in the northwest part of the county, on Shenandoah Mountain.

The observations recorded here have been accumulated over nearly forty-eight years, beginning in 1936. Because of the changes that are taking place in land use and human occupation of the area, it is considered important to set down these records for future reference. Much habitat, formerly suitable for many of these species, has been altered in recent years to the point where many species are no longer present where they once occurred. This is especially true of marshy ground used by frogs and toads as breeding areas. I have seen a number of such boggy spots drained either for real estate development or for agricultural use. Expanding human populations also mean more contacts between man and larger reptiles, particularly snakes. The forested areas, the Blue Ridge Mountains and the Alleghenies, protected by Shenandoah National Park and the George Washington National Forest, are much less subject to change. Except along roads and around picnic and camp grounds, where man is a factor, only clearcutting practices in the National Forest seem to be a threat.

### Salamanders

Notophthalmus viridescens viridescens (Red-spotted Newt). In the mountain areas this salamander is abundant in flood-control impoundments, wildlife watering ponds, river backwaters and the few natural ponds that exist in the county. The red eft is frequently encountered in woodland areas. More common in the mountainous portions of the county.

Ambystoma jeffersonianum (Jefferson Salamander). This species has been taken from a number of artificial ponds and natural pools on Shenandoah Mountain. Eggs have been observed as early as January 29, Dr. Amos Showalter has found



eggs deposited as early as late December or early January. The adults are most often encountered in March and April, although on one occasion I saw one in a pond in January, during a period of exceptionally warm weather. Breeding activity has been observed as late as April 9. The larvae are often very abundant in wildlife water holes during early summer. Metamorphosis occurs in mid-summer.

Ambystoma maculatum (Spotted Salamander). This salamander is most often encountered in pools and stream backwaters among lower mountain ridges. It has also been taken from a backwater of North River at Bridgewater. It has been found breeding as early as February 15.

Ambystoma opacum (Marbled Salamander). Although the larvae of this species have often been captured in March and April from small pools, I have only two records of adults: at Endless Caverns (Shenandoah Co.) and near Briery Branch, in Rockingham Co. I have taken it from transient pools that filled each winter, but are now drained for agricultural or housing development.

Desmognathus fuscus fuscus (Northern Dusky Salamander). This is the common salamander of small streams, springs and bog areas along the mountain ridges. It has been found in the Valley in only one spring.

Desmognathus monticola monticola (Appalachian Seal Salamander). This species occurs in cold spring runs, such as that in the deep and shaded ravine at Hone Quarry and on the east slope of Shenandoah Mountain.

Desmognathus monticola jeffersoni (Virginia Seal Salamander). I have seen this form only on the top of the Blue Ridge Mountains.

Desmognathus ochrophaeus (Mountain Dusky Salamander). This species occurs in springs and small creeks along Shenandoah Mountain, including springs on the mountain top. In color patterns, the most frequently occurring morph is the "ochrophaeus" type, with dark, dorsolateral lines and a mid-dorsal row of forward-directed, chevron-shaped spots.

Eurycea bislineata bislineata (Northern Two-lined Salamander). This is an abundant species along the small streams of the Valley and the mountain ridges.

Eurycea longicauda longicauda (Longtail Salamander). Not particularly common. This species has been taken along the small streams and springs at lower elevations along Shenandoah Mountain.

Gyrinophilus porphyriticus porphyriticus (Northern Spring Salamander). Found in cool mountain streams in the Blue Ridge Mountains and on Shenandoah Mountain.

Hemidactylium scutatum (Four-toed Salamander). I have taken this species only from a hemlock pool on Massanutten Mountain, Shenandoah Co.

Plethodon cinereus (Redback Salamander). Both the striped and unstriped morphs occur here; the former is more abundant. It is widely distributed and common both in the Valley and in the mountainous areas.



Plethodon glutinosus glutinosus (Slimy Salamander). This is a fairly abundant woodland species, found in suitable habitat at all elevations. There are scattered records from shaded ravines and wooded slopes.

Plethodon hoffmani (Valley and Ridge Salamander). I have seen this species only at higher elevations on Shenandoah Mountain.

Plethodon punctatus (White-spotted Salamander). One record, from a knoll on Shenandoah Mountain north of Reddish Knob, but originally described from Cow Knob, in the northwest part of the county by Richard Highton, and recorded by him at several points there.

Pseudotriton ruber ruber (Northern Red Salamander). This species has been taken from around springs and seeps of the Valley floor.

### Frogs and Toads

Acris crepitans crepitans (Northern Cricket Frog). This species begins calling during warm weather in mid-spring. I have taken it as late as June 30. It has been found locally abundant at some places in the Valley. Two colonies I depended on as late as the 1970's seem to have been extirpated.

Bufo americanus americanus (Eastern American Toad). I have heard this species calling as early as mid-March. In some places, such as at Hone Quarry Forest Camp, their call can be heard as late as the first part of July.

Bufo woodhouseii fowleri (Fowler's Toad). I have recorded this species at Bridgewater from the first week of May until early summer. It is apparently confined to the Valley and is not found along mountain streams.

Hyla crucifer crucifer (Northern Spring Peeper). This species breeds in almost all suitable, marshy spots in both the Valley and among the mountain ridges. Its activity usually begins with the first warm, wet weather of March, but may begin breeding as early as February in mild winters.

Hyla versicolor (Gray Treefrog). This species occurs in small, scattered localities. Its calling usually begins in warm weather in mid-May. Impoundments behind flood control dams in the mountains regularly have some calling males near them in late-May and in June.

Pseudacris triseriata feriarum (Upland Chorus Frog). This is the first frog to commence spring breeding activity. It has been taken at Bridgewater as early as February 25.

Rana catesbeiana (Bullfrog). Although this frog is much sought as a game species, it persists in modest numbers along the larger streams and in some farm ponds.

Rana clamitans melanota (Green Frog). This is a late spring and summer breeder. It occurs widely in suitable habitat, except along the mountain ridges.

Rana palustris (Pickerel Frog). Although not occurring in large concentrations, this frog has been taken calling in early spring, along with Hyla crucifer and Pseudacris triseriata in the same ponds. It is widespread in occurrence.

Rana sylvatica (Wood Frog). The earliest of the true frogs to begin calling in the spring. It may begin to assemble for breeding in woodland pools in the first or second week of March and as early as mid-February in favorable weather.

Scaphiopus holbrookii holbrookii (Eastern Spadefoot). Until recently, there was a substantial population of this species at Bridgewater. The town is situated on a flood plain terrace, but recent real estate development and building activity has resulted in draining and elimination of the places where water collected following heavy spring rains. These places were the breeding ponds for this species. One was turned up in planting a shrub in 1982, but I have not heard a chorus in several years. Records of breeding activity fall in the months of late-April, May and June.

#### Turtles

Chelydra serpentina serpentina (Common Snapping Turtle). This large and aggressive turtle, locally known as "mud turtle", is present in all the larger streams, and has also invaded many farm ponds. One specimen of 18 lbs. was caught on June 25, 1950. A huge specimen was seen in a rocky pool of the Cowpasture River in Bath County.

Chrysemys picta picta (Eastern Painted Turtle). This is the turtle, locally called "skillpot", most often encountered along the banks of streams and ponds. Local specimens approach C. p. marginata in some features.

Pseudemys concinna concinna (Eastern River Cooter). A single specimen was taken at Dayton, crossing the road at Cook's Creek Bridge, over 45 years ago. The specimen was lost in a move in 1953. Reports of large, shy turtles of this general pattern along the Shanandoah River suggest that it is present there.

Sternotherus odoratus (Stinkpot). A moderately common species along streams and some established ponds. I have taken it in the North River at Bridgewater.

Terrapene carolina carolina (Eastern Box Turtle). Abundant locally, especially in the Valley.

#### Lizards

Eumeces fasciatus (Five-lined Skink). This species was taken some years ago around old buildings, now removed, in Hone Quarry Valley and in Skidmore Hollow. It should be present in the eastern part of the county.

Sceloporus undulatus hyacinthinus (Northern Fence Lizard). This is the only common lizard of the area. It has been seen on rocky bluffs in the Valley and at lower elevations among the mountain ridges.



## Snakes

Agkistrodon contortrix mokeson (Northern Copperhead). Common in the forested, mountain areas, but rare in the Valley. In the summer of 1958 some twenty specimens were taken along VA Rt. 257, in its section among the Shenandoah ridges leading to the West Virginia line, by two residents of Bridgewater collecting along the highway at night.

Carphophis amoenus amoenus (Eastern Worm Snake). Not common in the Valley. I have seen it only on the Blue Ridge and at Briery Branch, at the foot of Shenandoah Mountain.

Coluber constrictor constrictor (Northern Black Racer). This is not a common species in the area. One was caught at Big Levels.

Crotalus horridus (Timber Rattlesnake). This snake seems to be more abundant in the Blue Ridge than in the Alleghenies. I have no records of it from the Valley. The collection made along VA Rt. 257, mentioned above, yielded one specimen.

Diadophis punctatus edwardsii (Northern Ringneck Snake). Widely distributed. This is probably the most abundant snake of the mountain ridges. It also occurs in the Valley.

Elaphe obsoleta obsoleta (Black Rat Snake). This is our second largest snake. It is still fairly common in both the Valley and mountains. It is particularly abundant in the forested areas in the mountains.

Heterodon platyrhinos (Eastern Hognose Snake). Present, but not abundant.

Lampropeltis triangulum triangulum (Eastern Milk Snake). Present, but not abundant.

Nerodia sipedon sipedon (Northern Water Snake). This is a common snake along all the streams and rivers.

Opheodrys vernalis vernalis (Eastern Smooth Green Snake). One specimen was at Bridgewater College when I arrived in 1936, but it had no data. I assume it was of local origin.

Pituophis melanoleucus melanoleucus (Northern Pine Snake). I have seen one specimen from Massanutten Mountain in Shenandoah County and one from Augusta County taken in the vicinity of Big Levels on the Blue Ridge. Our largest species of snake; it is quite rare.

Regina septemvittata (Queen Snake). I have taken this species only along moderately sized streams in the Valley, such as the Dry River and the North River at Bridgewater.

Storeria occipitomaculata occipitomaculata (Northern Redbelly Snake). Present, although not often encountered. More abundant in the mountains.



Thamnophis sauritus sauritus (Eastern Ribbon Snake). This species is not common here. One was caught on July 1, 1984 at Cold Spring Bog at Big Levels in Augusta County.

Thamnophis sirtalis sirtalis (Eastern Garter Snake). The commonest snake at lower elevations. Occurs in a variety of habitats.

#### Additional Possibilities

There are some species that have not been found in the county, for which continued search should be made. A list of such species follows.

Clemmys guttata (Spotted Turtle). Documented from adjacent Augusta County (Witt, 1963).

Clemmys insculpta (Wood Turtle). It may be that Rockingham Co. is south of the range of this species in Virginia. It still should be sought in the mountainous parts of the county.

Clemmys muhlenburgii (Bog Turtle). Found in the Blue Ridge Mts. well to the south of Rockingham Co. This species should still be watched for.

Cnemidophorus sexlineatus (Six-lined racerunner). This lizard might be expected to occur in eastern Rockingham Co., since it occurs west of the Blue Ridge Mts. in Alleghany Co. (Hoffman, 1944).

Elaphe guttata (Corn Snake). This snake should be looked for in the eastern portion of the county, along the Blue Ridge.

Eumeces anthracinus (Northern Coal Skink). The Ridge and Valley Province is within the range of this species (Conant, 1975).

Eumeces laticeps (Broad-head Skink). This species may occur here.

Eurycea lucifuga (Cave Salamander). I have searched in vain for this species and have asked several cave explorers to watch for it. It is still quite possible it will be found in the county.

Lampropeltis getulus (Eastern Kingsnake). I have not heard of or seen this snake in the county, but it may occur here.

Opheodrys aestivus (Rough Green Snake). This is another species that probably occurs in the eastern part of the county.

Scincella lateralis (Ground Skink). This species is known from eastern West Virginia. The northwestern part of Rockingham Co. is the most likely place for it to be found.

Storeria dekayi (Northern Brown Snake). This species might be looked for in the eastern part of the county.

Virginia valeriae (Eastern Earth Snake). This species might be found in any wooded area of the county. The subspecies V. v. pulchra is present in neighboring West Virginia (Conant, 1975) and in Highland Co., Virginia.

#### Acknowledgments

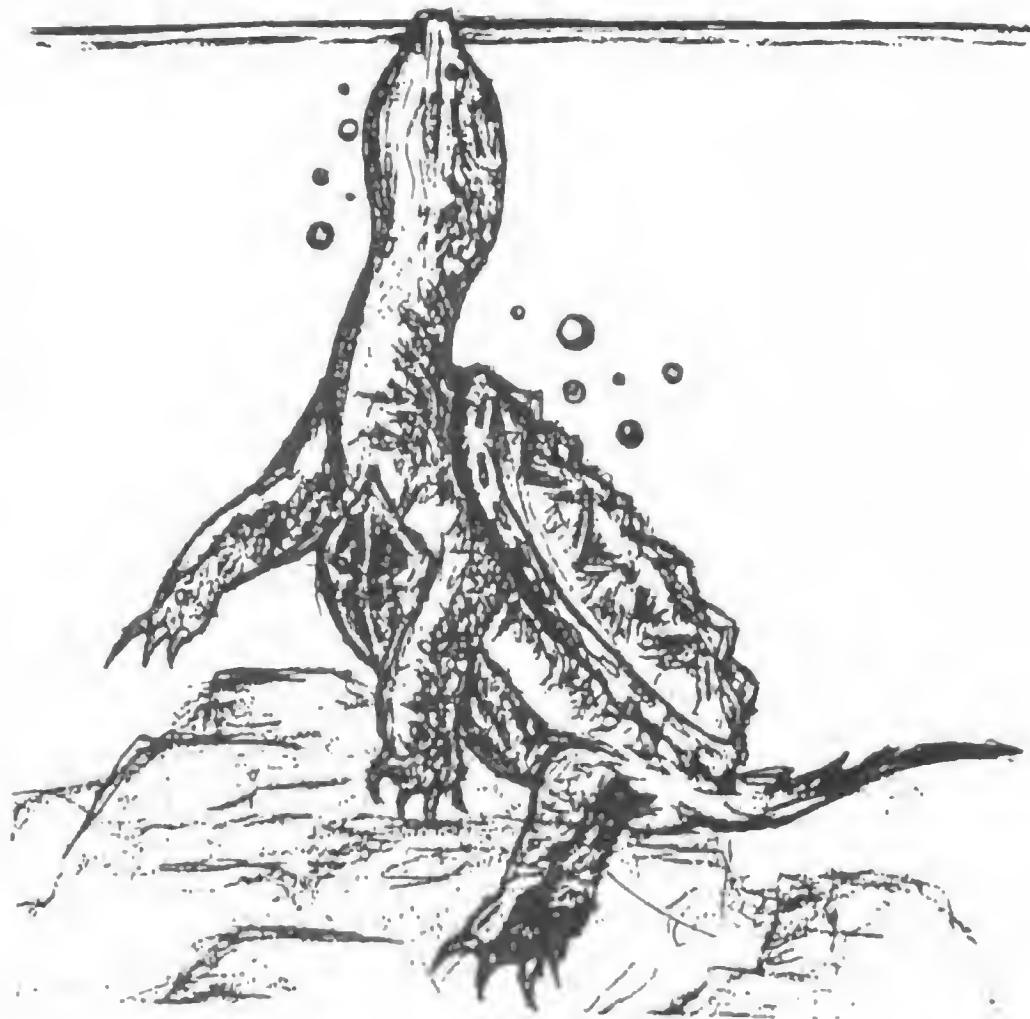
I thank James A. Organ for his suggestions regarding this paper.

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NOTES ON THE LOCAL DISTRIBUTION OF DESMOGNATHUS WRIGHTI  
AND PLETHODON WELLERI IN VIRGINIA

Christopher A. Pague

Dept. of Biological Sciences, Old Dominion University, Norfolk, VA 23508

The Pigmy salamander, Desmognathus wrighti, and Weller's salamander, Plethodon welleri, are known in Virginia only from the peaks of Mount Rogers and Whitetop Mountain above approximately 1220 meters. They are most abundant, however, in or just below the spruce-fir forest (Picea rubens and Abies fraseri) above 1524 meters (Organ, 1960, 1961). Stands of spruce-fir occur on several nearby ridges and peaks as well (e.g., Haw Orchard Mt., Wilburn Ridge, and Pine Mt.) and probably covered the entire area of high elevation before man's logging activities (Korstian, 1937; Oosting and Billings, 1951). In this note I report on D. wrighti and P. welleri at a previously unreported locality in the Mount Rogers-Whitetop area and discuss local distribution and conservation.

On July 15, 1983, at the suggestion of James A. Organ, I walked along Wilburn Ridge to Pine Mountain (Grayson Highlands State Park, Grayson Co., VA) in search of salamanders. The standard collection technique of turning (and replacing) logs and rocks was used in all available habitats. The area consists of high elevation (>1463 m) meadows, isolated patches of spruce and fir trees, and, on the north face of Pine Mountain, a large stand of medium-sized spruce and fir. Whereas the Mountain Dusky salamander, Desmognathus ochrophaeus (USNM-FS 116176-77 and uncataloged), was found in all habitats, it was not until I entered the coniferous forest on Pine Mountain's north slope (1.5 mi. E. of Mount Rogers) that I collected two D. wrighti (11683-84) and three P. welleri (116180-82). Associated with these specimens were D. ochrophaeus and Plethodon jordani, the Appalachian Woodland salamander. A thorough search of the patches of spruce-fir forest within the meadows and on the peak of Haw Orchard Mountain revealed neither D. wrighti nor P. welleri.

Though not an unexpected (J. A. Organ, pers. comm.) or significant range extension, these observations suggest that D. wrighti and P. welleri were once more widespread in the Mount Rogers area. Presumably the logging industry, man-set fire, and cattle grazing impacted heavily on the once magnificent stands of spruce and fir (Barden, 1978). Natural succession would eventually reclaim the balds, but the U.S. Forest Service and the Virginia Division of Parks and Recreation allow hoofstock grazing in an attempt to maintain the open lands. Within the balds I collected in several of the isolated "islands" of spruce-fir forest (estimated 0.25-2.5 ha) on Wilburn Ridge and Pine Mountain, yet only D. ochrophaeus was found. Apparently, D. wrighti and P. welleri cannot sustain populations in small island habitats, but require larger tracts of spruce-fir forest. Two possible explanations are offered to account for the absence of these two species. It is possible that islands of spruce and fir grew after decimation of the salamanders during logging and burning periods in the early 1900's. Colonizing individuals may not have reinvaded the habitat. Alternatively, the microhabitat within these islands is potentially altered, prohibiting establishment of colonizing individuals. The surface area of the small habitat may be so large as to allow excessive radiation and wind to penetrate, decreasing soil moisture levels. The observation that few specimens of any species were found within these island habitats unless a stream or seep was present supports this view. More study is needed to determine the limiting factors of the high elevation species, including critical habitat size.



Recreation pressures are steadily increasing in the Mount Rogers National Recreational Area. If the U.S. Forest Service pursues recreational development, it would be advisable to avoid division of the spruce-fir stands. The effects of habitat fragmentation by roads, clearings, or ski-runs on movement and life histories of salamanders (and most other wildlife) are not known, but preliminary observations herein suggest that small isolates of D. wrighti and P. welleri do not persist. More thorough surveys of the adjacent ridges having spruce-fir stands are warranted to determine the microdistribution of these two high-elevation species in the Mount Rogers and Pine Mountain area.

#### Acknowledgments

A discussion with James A. Organ led to the trip. Partial support for this trip was provided by the Virginia Academy of Science and the Virginia Division of Game and Inland Fisheries (Non-Game Program Grant to Joseph C. Mitchell). I am grateful to the Virginia Division of Parks and Recreation for permission to collect in Grayson Highlands State Park. Michelle Chandler and C. Ray Chandler kindly made suggestions on a draft of the manuscript.

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REPTILES AND AMPHIBIANS OF FAR SOUTHWESTERN VIRGINIA:  
REPORT ON A BIOGEOGRAPHICAL AND ECOLOGICAL SURVEY

Joseph C. Mitchell and Christopher A. Pague

Dept. of Biology, University of Richmond, Richmond, VA 23173  
Dept. of Biological Sciences, Old Dominion University, Norfolk, VA 23508

The area encompassed by Lee, Scott and Wise Counties in far southwestern Virginia is of particular importance to Virginia biogeography because it falls within the Tennessee River Drainage (Hoffman, 1969). In addition, the Cumberland Plateau Physiographic Region enters Virginia along the western boundaries of Lee and Wise Counties. Consequently, no fewer than eight species of reptiles and amphibians occur only in this area of Virginia. These are the map turtle, Graptemys geographica, the Cumberland slider, Pseudemys scripta troostii, the stripenck musk turtle, Sternotherus minor peltifer, the eastern spiny softshell turtle, Trionyx s. spiniferus, the green salamander, Aneides aeneus, the Black Mountain salamander, Desmognathus welteri, the mudpuppy, Necturus m. maculosus, and the Cumberland Plateau woodland salamander, Plethodon kentucki. The last species was recently redescribed by Highton and MacGregor (1983). For all the reptiles and most of the salamanders only a few scattered records and measurements exist. Seven species with more widespread distributions in eastern Virginia may have entered southwestern Virginia via the Tennessee River drainage owing to their close proximity in Tennessee and Kentucky (Conant, 1975). Only two of these have been confirmed (Burger, 1974; Mitchell, pers. obs.). Thus, the herpetofauna of far southwestern Virginia is inadequately studied even at the basic levels.

During the period of July 9-18, 1958 W. Leslie Burger collected 261 specimens of reptiles and amphibians in Lee County, Virginia and vicinity. This was the first and only comprehensive collection made in the far southwestern corner of the state. It contained two state species records and several others of biogeographical significance (Burger, 1974, 1975). Unfortunately, however, these specimens cannot be located and are presumed lost. During a three-day trip to the area in August, 1983 we attempted to duplicate Burger's records and succeeded in collecting single specimens of the two state species records reported by him, the map turtle (G. geographica) and the stripenck musk turtle (S. m. peltifer).

In view of the lack of voucher specimens of and baseline information on the reptiles and amphibians of far southwestern Virginia, we organized an expedition to Lee County and vicinity for the period of July 1-13, 1984. Our objectives were to verify the species listed by Burger (1974, 1975) and to obtain information on the natural history and ecology of these animals. This report presents the preliminary results of the trip and includes an account of methods, list of species collected, a map of collecting localities and natural history and taxonomic notes.

#### Methods

The 438 square miles encompassed by Lee County include a large topographic and habitat diversity, such as steep mountain ridges with mixed hardwood forests, rolling farmland, river bottom hardwoods, riverine aquatic habitats and limestone caves. Our first approach was to drive along secondary



roads searching for suitable places to collect. This proved far less productive in the low farmlands than in the mountains. We subsequently concentrated our efforts in areas which would (1) yield series of specimens, such as on mountain slopes for salamanders, (2) allow us to set turtle traps and collect terrestrial species nearby, and (3) allow us to ensure complete coverage of the county.

We used a variety of collection techniques. Turtle traps made of chicken wire (Iverson, 1979) and fyke nets were set in the Powell River in several locations and baited with sardines (fyke nets were unbaited). Road cruising was productive, especially for box turtles. Hand-collecting proved to be the best approach during both day and night forays. One day was devoted to collecting spring salamanders in caves by one field party. All specimens were kept on ice between capture and preservation. Most were preserved within hours of capture. Many were photographed. Specimens were measured and weighed before preservation. All will be deposited in the National Museum of Natural History (part) and the Carnegie Museum of Natural History (part).

During the time when several people were present, two field parties left camp each morning. One, headed by JCM, concentrated on checking turtle traps and general collecting. The other, headed by CAP, concentrated on mountain and upland habitats. This latter team conducted the cave survey. All participants were involved in night collecting for salamanders and road cruising. We found that teams of 3-4 people worked optimally and that two such teams could generate considerable data and specimens in a short period of time.

## Results

The collecting localities we visited, some several times, are shown in Figure 1. Of the 57 total sites, 46 were in Lee Co., 7 were in Scott Co. and 4 were in Wise Co.

All of the species collected by Burger (1974, 1975) except three, the eastern spiny softshell (Trionyx spiniferus), the eastern narrowmouth toad (Gastrophryne carolinensis) and the mud salamander (Pseudotriton montanus), were collected and verified by us (Table 1). One T. spiniferus was seen by C. J. McCoy in the Powell River near Hurricane Ford. We spent several nights road cruising but did not hear or find any G. carolinensis. Our coverage includes the probable area where Burger caught them; however, the information in Burger (1974) did not allow us to determine the precise locality. Briefly, Burger (1974) stated that he collected narrowmouth toads "At a pond near the Powell River, close to the intersection of VA #642 and US #58... The site is about 4 miles E of Jonesville, Va." Four miles east of Jonesville falls south of US 58 and is at least 1 mile south of the southern end of VA Rt. 642 (which nowhere intersects with US 58). We assumed that VA Rt. 642 was correct (5 mi. E Jonesville), but our efforts during a rainy night were fruitless. One of us, CAP, searched for the locality where Burger found P. montanus, but was unsuccessful.

We collected eleven species which were not obtained by Burger (1974, 1975). These are the green salamander (A. aeneus), hellbender (C. alleganiensis), Appalachian seal salamander (D. monticola), northern dusky salamander (D. fuscus), Black Mountain salamander (D. welteri), red-spotted newt (N. viridescens), northern red salamander (P. ruber), mountain chorus frog (P. brachyphona), bullfrog (R. catesbeiana), northern copperhead (A. contortrix), and eastern garter snake (T. sirtalis) (Table 1). We observed but were unable to collect a black racer (C. constrictor) or a painted turtle (C. picta). These were not reported in Burger (1975). The Cumberland Plateau woodland



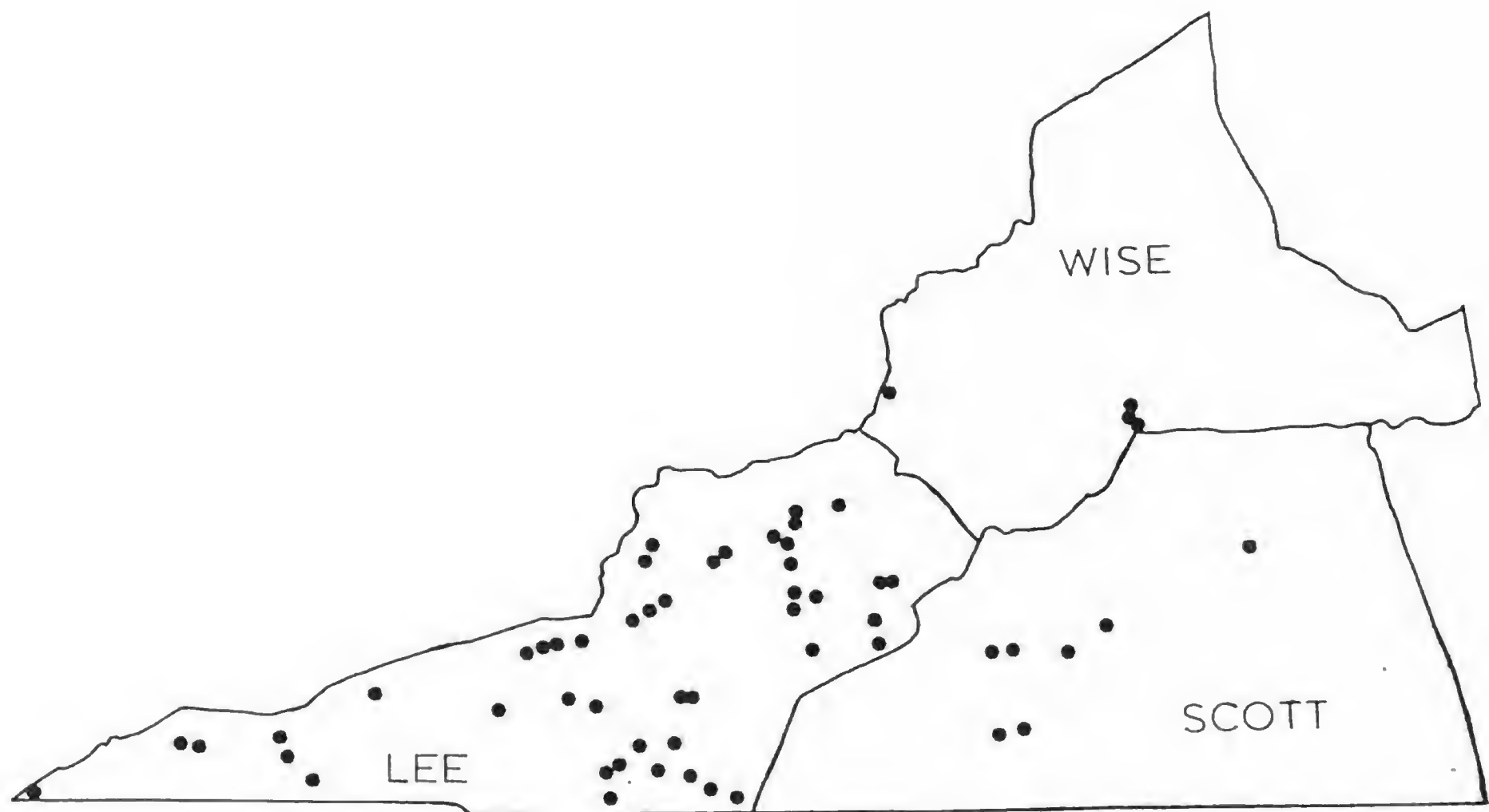


Figure 1. Localities where reptiles and amphibians were collected during the July 1-13, 1984 expedition to Lee, Wise and Scott Counties, Virginia.

salamander, *P. kentucki*, (Highton and MacGregor, 1983) would not have been considered by Burger.

Several snakes warrant comment. Burger (1975) caught one timber rattlesnake, *C. horridus*, at "Willis Hollow" (a locality apparently in error as we were unable to locate it on any map). We found shed skins of a specimen at an old, burned house site 2 mi. E of Jonesville, but were unable to find a living specimen. The worm snake, *C. amoenus*, caught by Burger on Wallen Ridge was thought to be an intergrade between the eastern subspecies (*C. a. amoenus*) and the midwest subspecies (*C. a. helenae*) (Burger, 1975). Our three specimens possess the paired separate internasal and prefrontal scales, characteristic of the eastern form. Thus, we could not confirm the presence of *C. a. helenae* in southwestern Virginia. The midland water snake, *N. sipedon pleuralis*, is characterized by smaller dorsal and lateral markings compared to the spaces between them, as opposed to the eastern subspecies which has narrow spaces (Conant, 1975). Burger (1975) identified the water snakes he collected in Lee Co. as *N. s. pleuralis*. Our specimens show a wide range of variation in this character. Without further study utilizing specimens from farther west and throughout southwestern Virginia, allocation to subspecies is impossible. The black kingsnake, *L. getulus niger*, we collected was a dried, flattened road-kill. We rehydrated it, then measured it, took scale counts, stomach contents (mandibles of a shrew), and photographed it for verification. Burger (1975) noted that only the skin of a DOR specimen

Table 1. Reptiles and amphibians of Lee County, Virginia and vicinity. Numbers represent number of specimens collected during W. L. Burger's survey in 1958 (1974, 1975) and during the 1984 expedition.

Species	1984	Burger 1958
Salamanders:		
<u>Aneides aeneus</u>	14	-
<u>Cryptobranchus alleganiensis</u>	1 <sup>a</sup>	-
<u>Desmognathus fuscus</u>	28	33
<u>Desmognathus monticola</u>	26	-
<u>Desmognathus ochrophaeus</u>	20	-
<u>Desmognathus welteri</u>	88	-
<u>Eurycea bislineata</u>	30	8
<u>Eurycea longicauda</u>	2	6
<u>Eurycea lucifuga</u>	34	4
<u>Gyrinophilus porphyriticus</u>	19	4 <sup>b</sup>
<u>Notophthalmus viridescens</u>	48	-
<u>Plethodon glutinosus</u>	64	24
<u>Plethodon kentucki</u>	84	-
<u>Plethodon richmondi</u>	10 <sup>c</sup>	-
<u>Pseudotriton montanus</u>	-	18 <sup>b</sup>
<u>Pseudotriton ruber</u>	2	1
Anurans:		
<u>Bufo americanus</u>	8	3
<u>Bufo woodhouseii</u>	28	9
<u>Gastrophryne carolinensis</u>	-	4
<u>Hyla chrysoscelis</u>	39	6
<u>Hyla crucifer</u>	27	1
<u>Pseudacris brachyphona</u>	2	-
<u>Rana catesbeiana</u>	8	-
<u>Rana clamitans</u>	3	9
<u>Rana palustris</u>	4	2
<u>Rana sylvatica</u>	2	2
Lizards:		
<u>Eumeces fasciatus</u>	6	1
<u>Sceloporus undulatus</u>	5	3
Snakes:		
<u>Agkistrodon contortrix</u>	3	-
<u>Carphophis amoenus</u>	3	1
<u>Coluber constrictor</u>	X <sup>d</sup>	-
<u>Crotalus horridus</u>	X	1
<u>Diadophis punctatus</u>	19	2
<u>Elaphe obsoleta</u>	2	3
<u>Lampropeltis getulus</u>	1	1
<u>Lampropeltis triangulum</u>	1	2
<u>Nerodia sipedon</u>	8	8
<u>Opheodrys aestivus</u>	3	2
<u>Regina septemvittata</u>	4	2
<u>Thamnophis sirtalis</u>	12	-



Table 1. continued

Turtles:		
<u>Chelydra serpentina</u>	15	9
<u>Chrysemys picta</u>	X	-
<u>Graptemys geographica</u>	1	1
<u>Sternotherus minor</u>	8	2
<u>Sternotherus odoratus</u>	6	1
<u>Terrapene carolina</u>	9	6
<u>Trionyx spiniferus</u>	X	3

<sup>a</sup>larva, <sup>b</sup>includes larvae, <sup>c</sup>Wise Co. only, <sup>d</sup>observed but not collected.

was saved. Thus, with the loss of Burger's collection, no specimens of L. g. niger from Virginia exist in any known collections.

We observed several G. geographica in the Powell River at almost all of the bridge crossings southwest of Pennington Gap. Only a young, beheaded male was collected, apparently a victim of its propensity to eat fish bait.

The Powell River harbors a diverse herpetofauna. Based on our observations and collections and descriptions of animals by local fishermen, six species of turtles and two species of salamanders inhabit the river. These are Cryptobranchus alleganiensis, Necturus maculosus, Chelydra serpentina, Chrysemys picta, Graptemys geographica, Sternotherus minor peltifer, Sternotherus odoratus, and Trionyx spiniferus. No present evidence allows us to include the Cumberland slider, P. scripta trootsii, in the list. This riverine herpetofauna appears to represent the most diverse river herp community in Virginia.

### Conclusions

Our present list of the herpetofauna of Lee County includes 25 species of amphibians and 21 species of reptiles. Undoubtedly other species will be added as more collections are made in this area. The topographic and habitat variety of Lee County suggests this will insure this prediction. We suspect that this area may turn out to be the most herpetologically diverse in the southwestern Virginia area. The herpetofaunal community in the Powell River invites further study. Future field efforts in Lee County should include verification of the species collected by Burger (1974, 1975) but eluded us.

### Acknowledgments

We especially thank the following people who made the long trip to provide field assistance: Ellen J. Censky, Rex B. Cocraft, Jill Feltner, David B. Grim, C. Jack McCoy, Joshua C. Mitchell, Wendy H. Mitchell, Addison H. Wynn. The efforts of Bill and Mable Schuler, caretakers of Cave Spring Campground, made our camping experience pleasant and memorable. Bill Schuler and friends caught several snakes for us. Man Ely allowed us to collect on his property and provided access to the Powell River. Jim Ely showed us a new cave and found a cave salamander in it. These gentlemen and several other colorful Lee County residents discussed the history of the area and

broadened our understanding of the effects of man on the local herpetofauna. John R. Holsinger (Old Dominion University) provided locations of several caves wherein we found several species of salamanders and otherwise "enjoyed" the bats, guano, mud and cow manure. The Lee County game warden, Jim Hieronimus, provided information that facilitated the organization of the expedition.

The Cumberland Gap National Historic Park granted us a collecting permit. We are grateful to the Society for the Study of Amphibians and Reptiles' Grants-in-Herpetology committee for providing a grant to cover some of the expenses of the expedition. Linda E. Maxson kindly got the check to us early for use on the trip. Supplies, equipment (except fyke nets provided by Jack McCoy) and expenses of JCM and CAP were defrayed by a grant from the Non-Game Species Program of the Virginia Commission of Game and Inland Fisheries.

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## ASIH/HL/SSAR MEETING ABSTRACTS

During July 29 - August 4, 1984 the American Society of Ichthyologists and Herpetologists, the Herpetologist's League and the Society for the Study of Amphibians and Reptiles held a joint meeting at the University of Oklahoma in Norman, OK. This was only the second time in the history of these societies that all three met together. This meeting, numbering over 950 registered participants, was well attended by VaHS members: Bob Bader, Richard Byles, Bill Dunson, Ben Greishaw, Lynn Kunze, Don Merkle, Joe, Wendy and Josh Mitchell, Paul Nicoletto, Chris Pague, Al Savitzky, and Shirley Whitt. Several members also presented papers; these are listed below. The abstract by Keen and Reed is included because it is directly related to Virginia herpetology. (Jack Brooks was scheduled to present a paper, but was unable to attend due to family illness)

Brooks, G. R.

College of William and Mary

### TIME AND ACTIVITY BUDGETS FOR THE LIZARD, ANOLIS LIVIDUS.

Time and event budgets were developed for adult Anolis lividus, a solitary endemic on Montserrat, W. I. Forty-four males and 31 females were observed for a total of 52 hours (male  $\bar{x}$  = 47 min.; female  $\bar{x}$  = 35 min.). Males changed their position more frequently than females. Females made twice as many successful foraging forays per hour than males (male = 2.6; female = 5.9). Males captured prey at higher sites than females (male  $\bar{x}$  = 1.5 m; female  $\bar{x}$  = 0.3 m). The majority of social interactions occurred between adult and juvenile males. In both sexes, over 95% of alert time was spent in foraging and social interactions.

Dunson, William A.

Pennsylvania State University

### ESTUARINE POPULATIONS OF THE TURTLE CHELYDRA AS A MODEL FOR THE EVOLUTION OF MARINE ADAPTATIONS IN REPTILES

Chelydra serpentina is one of the very few fresh-water turtles that commonly forage in brackish estuaries. It co-occurs with Kinosternon subrubrum in tidal creeks and on offshore islands, but Chelydra is the dominant species in terms of numbers and biomass. Chelydra is a highly aquatic reptile and has a substantial exchange of water through the skin (60% of total surface area). Mass relative body water turnover is inversely proportional to body mass. Thus small Chelydra have greater difficulty in osmoregulating in sea water than do large adults. Ten g hatchlings can not grow in salinities above one-third sea water, and have a sodium influx in sea water more than ten times that of 100 g turtles. In contrast large Chelydra can live for weeks in sea water but must return to fresh water periodically to rehydrate. Utilization of abundant estuarine food resources by this fresh-water turtle illustrates the most likely mode of origin of the specialized marine adaptations found in sea turtles.



Keen, W. Hubert and Ronald W. Reed  
State University of New York College at Cortland  
DEFENSE OF COVER SITES AND FEEDING SITES BY A PLETHODONTID SALAMANDER

Individual plethodontid salamanders of the species Desmognathus monticola were allowed to inhabit home enclosures containing a cover site at either end for at least seven days, after which unfamiliar conspecifics were introduced. Significant results ( $p < 0.05$ ) were obtained for each of the following: a) exclusion of conspecific intruders from cover sites occupied by residents in both laboratory containers and field enclosures; b) exclusion of intruders from sites with food supplements compared with sites where no food supplements were provided; and c) increased activity of residents not receiving food supplements compared with residents receiving food supplements. Residents showed site specificity only when food supplements were provided. D. monticola exhibit territoriality by excluding intruders from the space they occupy, and the availability of food can modify the tendency toward site specificity and the amount of time spent in foraging activity.

Mitchell, Joseph C.  
University of Richmond  
VARIATION IN MALE REPRODUCTIVE CYCLES IN SYNTOPIC POPULATIONS OF CHRYSEMYS PICTA AND STERNOTHERUS ODORATUS FROM VIRGINIA

Male reproductive cycles were studied over a two-year period in populations of C. picta and S. odoratus inhabiting a lake in central Virginia. Cycles were phenologically concordant between years within species and were similar between species. Testicular growth and recrudescence began in late-spring, followed by peak size and spermiogenesis in August and regression in fall and winter. Primary spermatocytes first appeared in April in C. picta and in May S. odoratus. The basking behavior of painted turtles may account for this difference. Regression first occurred for C. picta in September and for S. odoratus in October. Variation in seminiferous tubule diameter, body size, and month accounted for 80% of the variation in testis mass for C. picta and 90% for S. odoratus. C. picta males matured at plastron lengths of 72-77mm and produced spermatozoa for the first time at the end of their third year. S. odoratus matured at carapace lengths of 51-52mm and produced spermatozoa for the first time at the end of their second year.

Nicoletto, Paul Francis  
Virginia Polytechnic Institute and State University, Blacksburg, VA.  
The Roles of Vision and Olfaction in Prey Detection By Scincella lateralis.

Scincella lateralis responds to visual and chemical cues of prey. A visual stimulus is associated with an increased rate of tongue flicking, orientation to prey, and attack behavior. Chemical cues are unimportant when the visual cue (movement) is present. When prey are non-moving or dead, chemical cues enable the lizard to distinguish potential prey from inanimate objects.

Vision and the chemical senses interact in a complex way to form the predatory repertoire of Scincella lateralis. Lizards may adopt one of two basic foraging strategies, an actively foraging strategy or a sit-and-wait strategy. Lizards in the actively foraging mode use both visual and chemical cues to detect moving or non-moving prey. A lizard in the sit-and-wait mode uses vision to detect moving prey. However, if the prey eludes capture after a lizard in the sit-and-wait mode begins its predatory attack, chemical cues may be used to track or identify the prey.



## ANNOUNCEMENTS

### Fall 1984 VaHS Meeting

The fall VaHS meeting is to be held on October 6, 1984 at the Center in the Square (Roanoke Valley Science Museum) in Roanoke, VA. A map and directions are provided on the bottom of this page.

Meeting Place: Rooms A and B on the third floor of the Center in the Square building (the Science Museum is on the fourth floor)

Parking: There are several choices. 1) park on the street as near the building as possible - meter parking is free on Saturdays.  
2) Park in the Center in the Square parking deck (attached to the building. Costs = free for first 2 hrs, 35¢ for next half-hour and 60¢ for each hour thereafter. Parking for the meeting is on the third level, adjacent to the rooms on the third floor.  
3) there is an all-day lot 2 blocks from the Center in the Square (see maps). Cost is 75¢ for all day parking.

Schedule:	10:00 - 12:00	Business meeting
	12:00 - 1:00	Lunch
	1:00 - 5:00	Announcements, election of officers and papers

If you have questions about the meeting location, directions, and parking contact Vicki Ellis (703 - 342 - 5774 at the Museum) or Lynne Kunze (703 - 982 - 7326 at VA Western Community College or 703 - 992 - 5024 at home) or David Jobe (703 - 977 - 3529).

People wanting to present a talk about their work, show slides or just want to openly discuss VA herpetology, contact Joe Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173 (804 - 285 - 6275) for scheduling.

Directions: From the EAST follow US 460 to Williamson Rd., turn left and follow map below.  
From the NORTH and WEST follow I-81 to I-581 at Roanoke, follow I-581 into Roanoke and take the Williamson Rd. exit (follow signs to the Science Museum and the map below).



### Fall 1984 NCHS Meeting

The fall meeting of the North Carolina Herpetological Society will be held on November 10, 1984 at the North Carolina State Museum of Natural History in Raleigh, NC. For information contact the NCHS, North Carolina State Museum of Natural History, PO Box 27647, Raleigh, NC 27611.

### MDHS Meetings

Our other sister (state) society, the Maryland Herpetological Society, meets on the third Wednesday of each month (except May-Aug.; then each third Sat.) at the Natural History Society of Maryland, 2643 North Charles St., Baltimore, MD 21218. For additional information contact the MDHS, Dept. of Herpetology at this address.

### The Quaternary of Virginia Symposium

During Sept. 26-29, 1984 the Virginia Division of Mineral Resources is sponsoring a symposium on the Quaternary (Ice Ages) of Virginia. All of the talks will be on Sept. 27 and will include presentations on climate, vegetation, vertebrate fossil localities, and mammalian extinctions. The latter will include Dr. Paul S. Martin's view on man's involvement with these extinctions. Dr. J. Alan Holman, a noted paleoherpetologist, will talk on "Late Quaternary fossil vertebrates of Virginia". For information write S. O. Bird, Virginia Division of Mineral Resources, PO Box 3667, Charlottesville, VA 22903. If you are interested, you should call (804 - 293-5121) at this late date. Registration at the door is \$35.

## NEWS AND NOTES

### Spring 1984 VaHS Meeting

The spring 1984 VaHS meeting was held on April 14, 1984 at the residence of the president, Bob Bader, at South Isle Plantation in Charlotte Co., VA. Attendance numbered 30 individuals. During the morning an informal business meeting was held. In addition to the normal reports from the treasurer and editor, the group heard that the old Norfolk Museum of Natural History collection of herps (mainly that of R. Rageot) was apparently discarded long ago. It was mentioned that a new subspecies of rough green snake has been described by A. B. Grobman for the Virginia Barrier Islands (to be discussed in a later issue). The idea of having VaHS t-shirts and new patches was brought up and received favorable comments. More details will be presented at the fall meeting. We adjourned the meeting to have a lunch feast supplied by Eve Bader (was this the best part??).

The afternoon was devoted to field excursions on South Isle and included a visit to the only known breeding pond for mole salamanders in VA and forays to other areas. Several members stayed overnight to savor Bob's new house.



## Virginia Herpetology Project Update

Significant progress was made on the reptiles and amphibians of Virginia book during fiscal year 1983-1984. The final count revealed that we verified the identification of 17,605 museum specimens from the majority of the out-of-state museums. Locality data and date of collection were obtained for all of these, and data on variation, size, diet and reproduction were obtained from over several thousand specimens. These data are filed by species along with information obtained from the Virginia literature and other observations. These files will form the basis for the species accounts in the book.

In addition to the museum work, we have obtained considerable information from our own field observations and collections. We have been fortunate to have received original, unpublished field observations from several people, including Dr. R. G. Zweifel, N. D. Richmond, R. I. Crombie and others. All of this information will be included in the book in summary form. Those of you with field notes, as well as specimens, are encouraged to bring them to our attention. With your permission we will make copies of the notes and place them in the permanent file.

Our goals for FY 1984-85 are to complete the verification of museum and university collection specimens. Most of these are in VA. We will also fill additional gaps in the information records, especially for those species we know there are few data anywhere. Three species critically in need of information are the oak toad, siren and pine snake.

We hope to organize several group field trips like the one to Lee Co., but on a smaller scale. We are thinking of several three-day trips to various places in the state needing work during May-August 1985. These would probably be centered around state parks with camping facilities. We will provide more details in the next issue of Catesbeiana. (Joe Mitchell and Chris Pague).

## A Limited Bullfrog Season in Virginia

A query in Catesbeiana 4(1), pg. 13 requested information and possible field help on bullfrog season and bag limits. Only one response was received, that from a freshman high school student in Hanover Co. His report will be forthcoming.

## Virginia Herp Artwork

Laura Crews submitted a drawing of a juvenile snapping turtle drawn by Laurie Sutton (see pg. 9). Additional artwork and technical drawings not bound by copyright laws are needed. There is a Dover book with such drawings available with a section of herp drawings. If anyone has it, please loan it to us.

## SSAR Grant to VaHS

The VaHS received a grant from the Grants-in-Herpetology fund of the Society for the Study of Amphibians and Reptiles in June 1984. This grant was awarded to us based on a proposal for support of VaHS participation in the Lee Co. expedition during July 1-13. Two regional societies split the award. The other was a herp society in Israel.



### Recent Newsclippings of Interest

A Louisiana man was bitten by an apparent cottonmouth when he stuck his finger into a 1 1/2 lb bass he was cleaning. The snake was about a foot long and swallowed headfirst. The man required hospitalization.

In Port St. Lucie, Florida an 11-yr old boy was caught and drowned by a 12 foot alligator. The alligator grabbed him while both were swimming in the St. Lucie river. It was the sixth death from alligators since 1957. Signs are posted in the area to be aware of the gators, but people steal them. (Richmond News Leader, Aug. 8, 1984)

(NOTE: News clippings of herpetological interest should be sent to the editor who will use them at his discretion.)

### Recent Herp Talks by VaHS Members

Virginia reptiles and amphibians; Pocahontas State Park; July 21, 1984 and a herpetology field trip to Harrison Lake National Fish Hatchery for the Richmond Audubon Society; July 14, 1984 by Joe Mitchell.

(NOTE: A list of herp talks you give should be sent to the editor for inclusion in Catesbeiana. This section will allow other members to see what our people are doing for VA herpetology.)

### Miscellaneous

"The Turtles of Venezuela" by P.C.H. Pritchard and P. Trebbau. 1984. This book is the first in-depth treatment of a major South American turtle fauna. It includes all the turtles known from Venezuela (23 species), which represents half the known turtle fauna of South America. There are 48 full-page color plates, some original watercolors, and 165 other photos. There are distribution maps, accounts of the natural history of each species, fossil records, discussion of zoogeography, and keys in English and Spanish. The book is 414 pages, 8 1/2 by 11 inches bound in buckram. Price: US \$45.00. Order from Dr. Douglas H. Taylor, Department of Zoology, Miami University, Oxford, OH 45056. This is a Society for the Study of Amphibians and Reptiles publication. Make checks payable to "SSAR".

"Herpetology of Arabia", by J. Anderson. Reprint of a long out-of-date book by SSAR. Less than 100 copies of the original were printed in 1896. The book describes the herpetology of the Arabian Peninsula as then known, but there is a modern check-list of the herps of the area and an extensive introduction. Price to SSAR members before Nov. 30, 1984 is \$18.00. Price after this date and to nonmembers is \$24.00. There are 160 pages and one color plate. Order from Dr. D. H. Taylor at the above address.

"Their Blood Runs Cold", by Whit Gibbons, 1983. This book has been getting very good reviews and is a must for all herpetologists and naturalists. Order from The University of Alabama Press, Box 2877, University, AL 35486. Price: \$9.95 paper, \$19.75 hardbound.

"The Snakes of Texas", by A. Tennant. 1984. This is a 561 page book with color photographs of all 106 species of Texas snakes. Each account has a



distribution map and accounts of various aspects of the snake's natural history. Inquiries and orders should be made to Texas Monthly Press, PO Box 1569, Austin, TX 78767. Price: \$60.00 plus \$5 for tax and shipping.

"Snakes of Honduras", by L.D. Wilson and J.R. Meyer. 1982. This is a summary of the natural history of the snakes of Honduras and includes color photos and separate species accounts. Inquire to Editor, Publications, Milwaukee Public Museum, 800 West Wells St., Milwaukee, WI 53233. Price is \$22.50 plus shipping.

#### Herp Artwork

"Ecology Tees", by Esta Johnson of Fairfax, VA. These are great t-shirts. For a free brochure write Ecology Tees, 5219 Concordia St., Fairfax, VA 22032.

"Reptiles and Amphibians of Australia", by Kevin Stead. The prints by this artist received unusual attention and acclaim at the ASIH/HL/SSAR meetings. These paintings will astound you, they are so good. Several of the VaHS members attending bought his prints. For a free brochure write Kevin R. Stead, 59 Wilpena Street, Eden Hills, South Australia, Australia 5050. His price is only \$30.00 per print, and that includes packing and mailing!

Our own Ben Greishaw still carves beautiful herps from wood. You should see him at the VaHS meetings for a brochure and examples of his work.

#### On Field Notes

You should have noted that there is no Field Notes section in this issue. No one submitted any. This section was designed for reporting observations too short to be worked up into a full article. We can only assume that few, if any, of you made any herpetological observations this year. (the editors)

#### Virginia Herp News and Information

The information we include in the News and Notes section of Catesbeiana has been limited to what we come across ourselves. If you have anything you think the rest of us would be interested in, send it to us. We can also include announcements pertaining to many aspects of natural history, not just herpetology (herpetologists are interested in related things, aren't they?). (the editors)

#### VaHS Membership Dues

We do not make it a policy to send out dues notices each year. It's an expense our small society should not have to bear. We have done it in the past because a significant number of members were very late in paying and, apparently, needed reminding. Payment of dues BEFORE the next calendar year is your responsibility. DUES ARE DUE BY JANUARY 1 OF EACH YEAR.

#### VaHS Needs Members

We are a very small society. With the present membership of 59 we can just afford to produce Catesbeiana twice a year. If the society is to grow and make some contribution to VA herpetology and the people interested in it, then each of you needs to solicit two new members in 1985. Let's get a membership drive going!

# Virginia Herpetological Society



The Virginia Herpetological Society was organized in 1958 to bring together people interested in advancing the knowledge of Virginia's amphibians and reptiles. The VaHS encourages the scientific study of Virginia's herpetofauna and its conservation. Educational activities continue to be important society functions.

Meetings are held twice each year, usually April and October. The program includes an exhibit session and a contributed papers session, during which members present information on their work on the amphibians and reptiles of Virginia.

The VaHS publishes a bulletin, CATESBEIANA, twice each year which contains articles, news and information on various aspects of Virginia herpetology. Members publish field notes and observations, distributional information and suggestions for improving husbandry techniques. Review articles appear occasionally. Material for inclusion should be sent to the editor, Dr. Joseph C. Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173.

Society dues are currently \$5.00 per year for members over 18, \$3.00 for members under 18 and \$7.50 for families. Make checks payable to the Virginia Herpetological Society. Inquiries should be addressed to Dr. J. C. Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173. Dues should be sent to the treasurer, Ben Greishaw, 7622 Hollins Rd., Richmond, VA 23229.

## MEMBERSHIP APPLICATION

I wish to initiate/renew (circle one) membership in the Virginia Herpetological Society for the year 19\_\_.

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_

Dues Category \_\_\_\_\_